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**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of claims:**

Claim 1 (Original): A method of measuring the throughput of transmissions from a station to an access point over a wireless local area network, the method comprising:

sending messages from the station to the access point during a test period,

wherein the messages are sent as data frames;

receiving messages sent from the station at the access point during the test period;

sending acknowledgements from the access point to the station for messages received by the access point,

wherein acknowledgements are sent as control frames for each message received by the access point;

receiving acknowledgements at the station from the access point for messages received by the access point; and

determining a throughput for the test period based on the acknowledgements received at the station from the access point during the test period.

Claim 2 (Original): The method of claim 1, wherein sending messages includes:

sending a first message from the station to the access point, and

determining if an acknowledgement for the first message has been received at the station.

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Claim 3 (Original): The method of claim 2, wherein sending messages includes:

resending the first message if the station fails to receive an acknowledgement from the access point and if a retry limit has not been reached.

Claim 4 (Original): The method of claim 3, further comprising:

counting a retry for each message that is resent.

Claim 5 (Original): The method of claim 2, wherein sending messages includes:

counting a frame loss for the first message if the station fails to receive an acknowledgement from the access point and if a retry limit has been reached.

Claim 6 (Original): The method of claim 2, wherein sending messages includes:

sending a second message from the station to the access point after receiving an acknowledgement at the station for the first message or counting a frame loss for the first message.

Claim 7 (Original): The method of claim 1, wherein determining a throughput for the test period further comprises:

determining the throughput in bits per second based on the test period, the number of acknowledgements received at the station from the access point during the test period, and a number of bits included in each of the messages sent from the station to the access point during the test period.

Claim 8 (Original): The method of claim 1, further comprising:

sending a request to send frame from the station to the access point before sending each message; and

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receiving a clear to send frame at the station from the access point before sending each message.

Claim 9 (Original): The method of claim 1, wherein each message includes a header having a destination address set to the access point, a basic service set identification address (BSSID) set to the access point, and a source address set to the station.

Claim 10 (Original): The method of claim 9, wherein each message further includes a header having a destination service access point set to a null service access point.

Claim 11 (Original): The method of claim 1, further comprising:

sending the messages received by the access point to the station;

receiving the messages at the station from the access point;

determining a throughput from the access point to the station for the test period based on the messages that are received by the station from the access point during the test period.

Claim 12 (Original): The method of claim 11, wherein determining a throughput from the access point to the station for the test period further comprises determining the throughput in bits per second based on the test period, the number of messages received at the station from the access point during the test period, and a number of bits included in each of the messages sent from the station to the access point during the test period.

Claim 13 (Original): The method of claim 1, further comprising displaying at the station the determined throughput.

Claim 14 (Original): The method of claim 1, wherein data frames and control frames are sent according to the 802.11 standard, and wherein the acknowledgements are standard 802.11 ACK frames.

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**Claim 15 (Original):** The method of claim 1, wherein data frames and control frames are sent and received below a network layer in an OSI model.

**Claim 16 (Currently Amended):** A method of measuring the throughput of transmissions from a station to an access point over a wireless local area network, the method comprising:

sending messages from the station to the access point during a test period,

wherein the messages are sent as data frames;

receiving acknowledgements at the station from the access point,

wherein the acknowledgements are sent to the station as control frames for each message received by the access point; and

determining a throughput for the test period based on the number of acknowledgements received at the station from the access point during the test period,

wherein data frames and control frames are sent and received below the network layer according to the IEEE 802.11 standard.

**Claim 17 (Original):** The method of claim 16, wherein sending messages includes:

sending a first message from the station to the access point, and

determining if an acknowledgement for the first message has been received at the station.

**Claim 18 (Original):** The method of claim 17, wherein sending messages includes:

resending the first message if the station fails to receive an acknowledgement from the access point and if a retry limit has not been reached.

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**Claim 19 (Original):** The method of claim 18, further comprising:

counting a retry for each message that is resent, and

displaying at the station a number of retries counted during the test period.

**Claim 20 (Original):** The method of claim 17, wherein sending messages includes:

counting a frame loss for the first message if the station fails to receive an acknowledgement for the first message from the access point and if a retry limit has been reached.

**Claim 21 (Original):** The method of claim 20, further comprising displaying a number of frame losses counted during the test period.

**Claim 22 (Original):** The method of claim 17, wherein said sending messages includes:

sending a second message from the station to the access point after receiving an acknowledgement at the station for the first message or counting a frame loss for the first message.

**Claim 23 (Original):** The method of claim 16, wherein determining a throughput for the test period further comprises determining the throughput in bits per second based on the test period, the number of acknowledgements received at the station from the access point during the test period, and a number of bits included in each of the messages sent from the station to the access point during the test period.

**Claim 24 (Original):** The method of claim 16, further comprising:

sending a request to send frame from the station to the access point before sending each message; and

receiving a clear to send frame at the station from the access point before sending each message.

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**Claim 25 (Original):** The method of claim 16, wherein each message includes a header having a destination address set to the access point, a BSSID set to the access point, and a source address set to the station.

**Claim 26 (Original):** The method of claim 25, wherein each message further includes a header having a destination service access point set to a null service access point.

**Claim 27 (Original):** The method of claim 16, further comprising:

receiving messages at the station from the access point,

wherein the access point sends the messages to the station after receiving the messages from the station;

determining a throughput from the access point to the station for the test period based on the messages received by the station from the access point during the test period.

**Claim 28 (Original):** The method of claim 27, wherein determining a throughput from the access point to the station for the test period further comprises determining the throughput in bits per second based on the test period, the number of messages received at the station from the access point during the test period, and a number of bits included in each of the messages sent from the station to the access point during the test period.

**Claim 29 (Original):** The method of claim 16, wherein data frames are at least 29 bytes in length,

wherein control frames are at most 20 bytes in length, and

wherein acknowledgements are 14 bytes in length.

**Claim 30 (Original):** A method of measuring the throughput of transmissions from an access point to a station over a wireless local area network, the method comprising:

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sending messages from the station to the access point during a test period,

wherein the messages are sent as data frames;

receiving messages sent from the station at the access point during the test period;

sending the messages received by the access point to the station;

receiving the messages at the station from the access point; and

determining a throughput for the test period based on the messages that are sent from the station to the access point and received by the station from the access point during the test period.

Claim 31 (Original): The method of claim 30, wherein sending messages includes:

sending a first message from the station to the access point, and

determining if an acknowledgement frame for the first message has been received at the station,

wherein the acknowledgement is sent as a control frame from the access point to the station when the access point receives the first message.

Claim 32 (Original): The method of claim 31, wherein sending messages includes:

resending the first message if the station fails to receive an acknowledgement from the access point for the first message and if a retry limit has not been reached.

Claim 33 (Original): The method of claim 31, wherein sending messages includes:

counting a frame loss for the first message if the station fails to receive an acknowledgement from the access point for the first message and if a retry limit has been reached.

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**Claim 34 (Original):** The method of claim 31, wherein said sending messages includes:

sending a second message from the station to the access point after receiving an acknowledgement at the station for the first message or counting a frame loss for the first message.

**Claim 35 (Original):** The method of claim 30, wherein determining a throughput for the test period further comprises determining the throughput in bits per second based on the test period, the number of messages sent from the station to the access point and received by the station from the access point during the test period, and a number of bits included in each of the messages sent from the station to the access point during the test period.

**Claim 36 (Original):** The method of claim 30, further comprising:

sending a request to send frame from the station to the access point before sending each message; and

receiving a clear to send frame at the station from the access point before sending each message.

**Claim 37 (Original):** The method of claim 30, wherein each message includes a header having a destination address set to the station, a BSSID set to the access point, and a source address set to the station.

**Claim 38 (Original):** The method of claim 30, further comprising:

receiving acknowledgements at the station from the access point for messages received by the access point,

wherein the acknowledgements are sent as control frames for each message received by the access point;

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determining a throughput from the station to the access point for the test period based on the number of acknowledgements received at the station from the access point during the test period.

Claim 39 (Original): The method of claim 30, wherein sending and receiving data frames and control frames is accomplished below a network layer.

Claim 40 (Original): The method of claim 39,

wherein sending and receiving data frames is accomplished at a data link layer, and

wherein the data link layer operates according to an IEEE 802.11 standard.

Claim 41 (Original): A method of measuring the throughput of transmissions over a wireless local area network having a station and an access point, the method comprising:

sending messages from the station to the access point during a test period,

receiving messages sent from the station at the access point during the test period;

sending ACK frames from the access point to the station for messages received by the access point,

receiving ACK frames at the station from the access point for messages received by the access point;

sending the messages received by the access point to the station;

receiving the messages at the station from the access point;

determining a throughput from the station to the access point for the test period based on the ACK frames received by the station from the access point during the test period; and

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determining a throughput from the access point to the station for the test period based on the messages that are sent from the station to the access point and received by the station from the access point during the test period.

Claim 42 (Original): The method of claim 41, wherein sending messages includes:

sending a first message from the station to the access point, and

determining if an ACK frame for the first message has been received at the station.

Claim 43 (Original): The method of claim 42, wherein sending messages includes:

resending the first message if the station fails to receive an ACK frame from the access point for the first message and if a retry limit has not been reached.

Claim 44 (Original): The method of claim 42, wherein sending messages includes:

counting a frame loss for the first message if the station fails to receive an ACK frame from the access point for the first message and if a retry limit has been reached.

Claim 45 (Original): The method of claim 42, wherein said sending messages includes:

sending a second message from the station to the access point after receiving an ACK frame at the station for the first message or counting a frame loss for the first message.

Claim 46 (Original): The method of claim 41, wherein the messages and ACK frames are sent according to the IEEE 802.11 standard.

Claim 47 (Original): A system for measuring the throughput of transmissions over a wireless local area network, the system comprising:

a station configured to:

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send messages to an access point during a test period,  
wherein the messages are sent as data frames,  
receive acknowledgements from an access point during a test period,  
wherein the acknowledgements are received as control frames,  
determine a throughput for a test period based on the acknowledgements received  
from the access point during the test period; and  
an access point configured to:  
receive messages from the station,  
wherein the messages are received as data frames,  
send acknowledgements to the station for each message received from the station,  
wherein the acknowledgements are sent as control frames.

Claim 48 (Original): The system of claim 47, wherein the station is further configured to  
resend a message to the access point if the station fails to receive an acknowledgement for the  
message from the access point and if a retry limit has not been reached.

Claim 49 (Original): The system of claim 48, wherein the station is further configured to:  
count a retry for each message that is resent, and  
display a number of retries counted during a test period.

Claim 50 (Original): The system of claim 47, wherein the station is further configured to:

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count a frame loss when the station fails to receive an acknowledgement for a message sent by the station and when a retry limit has been reached for the message, and

display a number of frame losses counted during a test period.

Claim 51 (Original): The system of claim 47, wherein the station is further configured to send the messages sequentially, such that the station is configured to send a second message after receiving an acknowledgement or counting a frame loss for a previously sent first message.

Claim 52 (Original): The system of claim 47, wherein the station configured to determine a throughput for a test period is further configured to determine a throughput in bits per second based on a test period, a number of acknowledgements received at the station from the access point during the test period, and a number of bits included in each of the messages sent from the station to the access point during the test period.

Claim 53 (Original): The system of claim 47, wherein the station is further configured to:

send a request to send frame to the access point before sending a message, and

receive a clear to send frame from the access point before sending a message.

Claim 54 (Original): The system of claim 53, wherein the access point is further configured to:

receive a request to send frame from the station, and

send a clear to send frame to the station.

Claim 55 (Original): The system of claim 47, wherein each message includes a header having a destination address set to the access point, a BSSID set to the access point, and a source address set to the station.

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Claim 56 (Original): The system of claim 55, wherein each message further includes a header having a destination service access point set to a null service access point.

Claim 57 (Original): The system of claim 47, wherein the station is further configured to:

receive messages from the access point; and

send acknowledgements to the access point.

Claim 58 (Original): The system of claim 57, wherein the access point is further configured to:

send messages to the station after receiving the messages from the station; and

receive acknowledgements from the station.

Claim 59 (Original): The system of claim 57, wherein the station is further configured to determine a throughput from the access point to the station for a test period based on the number of messages received from the access point during the test period.

Claim 60 (Original): The system of claim 47, wherein the station and the access point are configured to send and receive data frames and control frames at a layer below a network layer.

Claim 61 (Original): The system of claim 47, wherein the station and access point are configured to send and receive data frames and control frames at a data link layer.

Claim 62 (Original): The system of claim 47, wherein the station and access point are configured to send and receive data frames and control frames according to an IEEE 802.11 standard.

Claim 63 (Original): The system of claim 47, wherein the station is further configured as a diagnostic tool.

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**Claim 64 (Original):** The system of claim 47, wherein the station is further configured as an administrative tool.

**Claim 65 (Original):** A computer-readable storage medium containing computer executable code to measure the throughput of transmission from a station to an access point over a wireless local area network by instruction the computer to operate as follows:

sending messages from the station to the access point during a test period,

wherein the messages are sent as data frames;

receiving acknowledgements at the station from the access point,

wherein the acknowledgements are sent to the station as control frames for each message received by the access point; and

determining a throughput for the test period based on the number of acknowledgements received at the station from the access point during the test period

**Claim 66 (Original):** The computer-readable storage medium of claim 65, wherein sending messages includes:

sending a first message from the station to the access point, and

determining if an acknowledgement for the first message has been received at the station.

**Claim 67 (Original):** The computer-readable storage medium of claim 66, wherein sending messages includes:

resending the first message if the station fails to receive an acknowledgement from the access point and if a retry limit has not been reached.

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Claim 68 (Original): The computer-readable storage medium of claim 67, further comprising:

counting a retry for each message that is resent.

Claim 69 (Original): The computer-readable storage medium of claim 66, wherein sending messages includes:

counting a frame loss for the first message if the station fails to receive an acknowledgement for the first message from the access point and if a retry limit has been reached.

Claim 70 (Original): The computer-readable storage medium of claim 66, wherein said sending messages includes:

sending a second message from the station to the access point after receiving an acknowledgement at the station for the first message or counting a frame loss for the first message.

Claim 71 (Original): The computer-readable storage medium of claim 65, wherein determining a throughput for the test period further comprises determining the throughput in bits per second based on the test period, the number of acknowledgements received at the station from the access point during the test period, and a number of bits included in each of the messages sent from the station to the access point during the test period.

Claim 72 (Original): The computer-readable storage medium of claim 65, further comprising:

sending a request to send frame from the station to the access point before sending each message; and

receiving a clear to send frame at the station from the access point before sending each message.

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**Claim 73 (Original):** The computer-readable storage medium of claim 65, wherein each message includes a header having a destination address set to the access point, a BSSID set to the access point, and a source address set to the station.

**Claim 74 (Original):** The computer-readable storage medium of claim 73, wherein each message further includes a header having a destination service access point set to a null service access point.

**Claim 75 (Original):** The computer-readable storage medium of claim 65, further comprising:

receiving messages at the station from the access point,

wherein the access point sends the messages to the station after receiving the messages from the station;

determining a throughput from the access point to the station for the test period based on the messages received by the station from the access point during the test period.

**Claim 76 (Original):** The computer-readable storage medium of claim 75, wherein determining a throughput from the access point to the station for the test period further comprises determining the throughput in bits per second based on the test period, the number of messages received at the station from the access point during the test period, and a number of bits included in each of the messages sent from the station to the access point during the test period.

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